# Reports of Self-Harm and Social Stressors Among Early Adolescents: A Brief Report

*James A. Teufel, Stephen L. Brown, and David A. Birch*

**Abstract**

This study examined reports of self-harm by early adolescents as well as associations between salient interpersonal stressors and self-harm. While attending health education centers located in Illinois, Indiana, North Carolina, and Pennsylvania, early adolescents (n = 737) responded to a questionnaire measuring stressors, coping, and self-harm. Approximately 19% of early adolescent students reported some type of self-harm. Those reporting parents as a source of stress more frequently reported self-harm, compared to those who did not report parents as a source of stress. The results of this study further evidence the problem of self-harm during adolescence. Due to the prevalence of self-reported self-harm and the long lasting consequences of self-harm, prevention or early intervention is crucial to the wellbeing of some youth. Self-harm, especially self-harm that includes the use of objects, and self-harm's association with parent-focused stress deserve further research. Suggestions are given for prevention/intervention programs among early adolescents.

Self-harm and self-mutilation behaviors are prevalent during adolescence in both community and clinical samples (Kumar, Pepe, & Steer, 2004; Favazza, 1998; Ross & Heath, 2002; Skegg, 2005). Although definitions of self-harm and self-mutilation differ across studies (Skegg, 2005; Suyemoto, 1998), self-harm typically includes intentional self-injury, with or without suicidal intent (Hurry, 2000). Self-mutilation is a subset of self-harm that includes an intentional, socially unacceptable form of bodily destruction or alteration without suicidal intent (e.g., tattooing and piercing are typically not considered self-mutilation). Self-cutters are typically categorized as self-mutilators (Favazza, 1998; Suyemoto, 1998), although some researchers exclude self-cutters from the self-harm group (Webb, 2002). This study uses a broad definition of self-harm that includes self-mutilation and self-cutting. Estimates of annual self-harm in the United States have ranged from 36,000 to over 1.5 million (Suyemoto, 1998).

Recent reports showed that about 323,000 individuals per year, across all ages, were treated in hospital emergency departments for nonfatal self-harm injuries, and approximately 20% utilized cutting or piercing as their method of self-harm. Behind self-poisoning, self-cutting/piercing is the second most prevalent method of nonfatal self-harm recorded in hospital emergency departments in United States (Vyrostek, Annest, Ryan, & the Office of Statistics and Programming National Center for Injury Prevention and Control, 2004). Onset of self-mutilation is typically middle to late adolescence (Suyemoto, 1998). Between 5-9 and 10-14 years of age, the number of nonfatal self-harm injuries presenting at hospital emergency departments increased about twenty five fold: 589 cases for ages 5-9 and 15,832 cases for ages 10-14. (Vyrostek, et al, 2004). However, prevalence of nonfatal self-harm, based on clinical data, may be underestimated because many of those who self-harm do not have their self-harm behaviors recorded in emergency departments or other clinical settings (Laye-Gindhu & Schonert-Reichl, 2005; Ross & Heath, 2002).

Although self-harm research has typically focused on disordered psychological functioning, such as depression and anxiety (e.g., Favazza, 1998; Ross & Heath, 2002), previous studies have indicated that interpersonal relationships or contexts, especially familial, are also associated with self-harm (Abrams & Gordon 2003; Laye-Gindhu & Schonert-Reichl, 2005; Murray, Warm, & Fox, 2005; Skegg, 2005; Webb, 2002). While research on adolescent self-harm has typically focused on middle or late adolescence, this study examined reports of self-harm by early adolescents (ages 8 through 14). It also examined associations between self-harm and salient interpersonal stressors. The categories of self-harm used in this study were similar to those positioned by Skegg (2005), namely: (1) self-harm by bringing an object to one's body (cutting, stabbing, or burning oneself), (2) self-harm without an object (hitting self, biting self, pinching self, or pulling one's hair), and (3) self-harm by bringing one's body to an object (e.g., banging one's head on wall).

Previous research and transaction theory guided the study. Transactional theory purports that personal and environmental characteristics are expected to be associated with the self-harm coping method (Lazarus & Folkman, 1987). The manuscript is organized around three research questions. First, how many early adolescents report self-harm? Second, how frequently are different types of self-harm reported by early adolescents? Third, does reporting

* James A. Teufel, MPH, Doctoral Student; Department of Health Education and Recreation, Southern Illinois University, Carbondale, IL 62901-4632; Telephone: 618-453-3164; Fax:618-453-1869; E-mail: teufel@siu.edu; Chapter: Alpha Alpha

Stephen L. Brown, PhD, Assistant Professor; Department of Health Education and Recreation, Southern Illinios University, Carbondale, IL; Chapter: Alpha Alpha

David A. Birch, PhD, Professor and Chair, Department of Health Education and Recreation, Southn Illinois University, Carbondale, IL; Chapter, Alpha Alpha

* Corrsponding author

parents as a stressor predict self-harm over and above other interpersonal stressors (siblings and peers) or interpersonal stressor contexts (school)? In addition, the associations between self-harm and additional interpersonal stressors or contexts were also explored. In recognition of the emotional states that often precede self-harm, early adolescents were asked about their self-harm behaviors that they engaged in when "stressed or upset" (Murray, Warm, & Fox, 2005).

## Methods

While participating in structured educational activities in one of six health education centers located in Illinois, Indiana, North Carolina, and Pennsylvania, 825 students had the opportunity to respond to a questionnaire that included closed-ended and open-ended questions about stress, coping, and self-harm. Seven hundred and thirty-seven students voluntarily and validly completed the questionnaire. The students completed the questionnaire during class field trips to health education centers. Students from 19 different schools participated in this study.

Following Institutional Review Board approval, staff at each center contacted school officials prior to each class' visit to arrange permission to implement the questionnaire during the class' visit to the health education center. School officials and teachers reviewed and approved the questionnaire as a structured educational experience prior to administration. In accordance with centers' and schools' policies, parental permission was passive and was given with the permission to attend the educational experience at the health education center. During the center visits, staff explained the purpose of the questionnaire and invited, but did not require, all students in selected classes to participate. All students remained anonymous.

Participants answered an open-ended question in which they were asked to list their top two stressors. Due to the open-ended nature of this question, a stressor response could have received multiple categorizations during coding, and a participant could have responded with multiple stressors within a single response; as a result, stressor categories were potentially non-exclusive and non-independent. Regarding the coding process, a master coder reviewed participant responses for thematic categories. Next, a second coder reviewed the thematic categories for face and content validity. Based on this inductive process, three overall self-harm categories and 30 stressor categories emerged from participant responses, though only five of those stressor categories were within the scope of this manuscript. To address the reliability of the thematic categories, a third coder quantitatively recoded participants' responses into these thematic categories and these codes were compared to the master coder's quantitative coding of participants' responses. Inter-coder reliability exceeded .75 based on Cohen's Kappa (family stressor = .975; parental stressor = .959; sibling stressor = .981; peer stressor = .753; school stressor = .956; self-harm by bringing an object to one's body = .873; self-harm without an object = .783; self-harm by bringing one's body to an object = .918).

To assure face and content validity, in addition to the authors and health education center staff, an expert advisory panel reviewed and assisted in the construction of the items included in this questionnaire. Along with pilot results, the expert panel received reports from pilot centers regarding center staff's, students', and teachers' perceptions of the questionnaire.

## Results

Participants ranged in age from 8 to 14 years with a mean age of 11.1 years. Females made up 45.5% of the study sample. Based on school level data retrieved from the National Center for Educational Statistics (National Center for Education Statistics, 2005), the schools participating in this study represented diversity across ethnicity, income, and location. The participating schools had student bodies that were 75% white, 10% black, 12% Hispanic, and 3% Asian. Twenty-five percent of students in participating schools qualified for free or reduced lunch. Regarding school locale, 36% of the schools were located within large city centers; 10% in a midsize city center area; 28% in a large city fringe area; 26% in midsize city fringe area; and 0% in a small town or rural area.

### *Frequencies*

How many early adolescents report self-harm? Of the early adolescents in this sample, 19.2% reported using some type of self-harm when "stressed" or upset.

How frequently are different types of self-harm reported by early adolescents? Bringing one's body to an object was the most frequently reported type of self-harm (9.0%); self-harm without an object was the second most frequently reported type of self-harm (6.2%); bringing an object to one's body was the third most frequently reported type of self-harm (4.2%); and other types of self-harm were reported by 1.1% of early adolescents in this sample. The frequencies of reported self-harm and stressor responses are summarized in Table 1.

Does reporting parents as a stressor predict self-harm over and above other interpersonal stressors (siblings and peers) or interpersonal stressor contexts (school)? Six-hundred ninety-nine participants with valid data for age, gender, salient stressors, and self harm were included in dichotomous logistic regression analyses. The adjusted odds ratios of family-focused, peer/friend-focused, and school-focused stressors measured the relationship among stressor types and each of four types of self-harm. The fourth type of self harm was "any type of self-harm." The odds ratios were first adjusted in a base model that included gender, a five level dummy coded variable representing participant age, and one interpersonal salient stressor (i.e., family, parent, sibling, peer, or school). An adjusted model was also used

Table 1

*Percentages for Self-Reported Stressors and Self-Harm When Stressed or Upset (n = 737)*

| Type of stress | Percent |
|---|---|
| School, grades, or homework | 36.6 |
| Family[a] | 31.3 |
| Peers or friends | 20.2 |
| Siblings | 19.1 |
| Parents | 14.1 |
| **Type of self-harm** | **Percent** |
| Any self-harm[b] | 19.2 |
| Self-harm by bringing an object to one's body | 4.2 |
| Self-harm without an object | 6.2 |
| Self-harm by bringing one's body to an object | 9.0 |
| Other self-harm (fall or choke) | 1.1 |

[a]The family percent is not the sum of siblings and parents because family could include or exclude siblings or parents, and participants could have responded with both sibling and parents. [b]The subcategory percentages sum to more than the self-harm total percentage because some participants reported more than one form of self-harm.

to analyze the odds ratios of all of the predictors simultaneously. The adjusted model, again, included age and gender, but added parent, sibling, peer, and school as simultaneous predictors of each type of self harm. One adjusted model assessed each of the self-harm outcome variables.

### *Logistic regression analyses*

Logistic regression analyses generated adjusted odds ratios for social context predictors' relationship with each type of self-harm (see Table 2 for a detailed listing of adjusted odds ratios). Regardless of the age and gender of early adolescents, family-focused salient stressors significantly predicted (1) any type of self-harm, (2) self-harm by bringing an object to one's body, and (3) self-harm through bringing one's body to an object (Table 2). Parent-focused stressors were a more consistent predictor (Base Model $AOR_{\text{any self-harm}} = 3.18, p<.05$; Base Model $AOR_{\text{bring object to body}} = 5.31, p<.05$; Base Model $AOR_{\text{without object}} = 0.98$, *ns*; Base Model $AOR_{\text{bring body to object}} = 2.98, p<.05$) than sibling-focused, school-focused, or peer-focused stressors for all categories of self-harm (Table 2). When examining odds ratios from the adjusted model, parent-focused stressors predicted these same self-harm outcomes after statistically controlling for gender, age, sibling-, peer/friend-, and school-based stress (Adjusted Model $AOR_{\text{any self-harm}} = 2.82, p<.05$; Adjusted Model $AOR_{\text{bring object to body}} = 4.63, p<.05$; Adjusted Model $AOR_{\text{without object}} = 0.89$, *ns*; Adjusted Model $AOR_{\text{bring body to object}} = 2.68, p<.05$). Early adolescents who reported parents as a salient stressor were more likely to have reported any type of self-harm, self-harm by bringing an object to one's body, and self-harm through bringing one's body to an object. In the adjusted model, reporting peers or school as a stressor predicted a decreased likelihood of reporting any type of self-harm. Additionally, reporting school as a stressor also decreased the likelihood of reporting self-harm by bringing an object to one's body (Table 2).

Note that for the sake of parsimony and due to the availability in common statistical software programs such as SPSS, the Wald statistic is reported for each variable and tests for statistical significance. The Wald statistic is a type of $X^2$ (or chi-square) statistic. Further, the Wald statistic acts as a slightly more conservative test than the Likelihood Ration Test (Cohen, Cohen, West, & Aiken, 2003; Long, 1997).

## Discussion

Early adolescents frequently reported self-harm: almost 1 in 5 reporting some type of self-harm and about 1 in 24 reporting self-mutilating with an object. Due to the diversity of data collection methods and sampling, it is difficult to compare the prevalence in this study to national norms. This study does, however, show that, similar to other community samples, prevalence in community self-report samples greatly exceeds the prevalence of those receiving clinical diagnoses within the health care system. The prevalence of reported self-mutilation in this sample and based on prior self-mutilation research also indicates that many early adolescent students are at the very least leaving lasting physical scars on their bodies by using self-mutilation as a form of coping. Beyond these issues of superficial injury, some types of self-harm (e.g., cutting) have been associated with suicidality (Skegg, 2005). After statistically adjusting for age, gender,

Table 2

*Logistic Regression Analyses of Predictors and Categories of Self-Harm (n=699)*

| Any self harm | Base model[a] | | Adjusted model[b] | |
|---|---|---|---|---|
| | Wald statistic | Odds ratio | Wald statistic | Odds ratio |
| Female[c] | 4.85*-7.56* | 0.58-0.65 | 5.59* | 0.62 |
| Age[d,e] | 4.57-6.71 | n/a | 3.64 | n/a |
| Family | 15.76* | 2.19 | n/a | n/a |
| Parents | 23.84* | 3.18 | 18.38* | 2.82 |
| Siblings | 1.33 | 1.31 | 0.03 | 0.96 |
| Peers or friends | 5.65* | 0.53 | 5.10* | 0.53 |
| School | 7.06* | 0.57 | 7.36* | 0.55 |
| **Self-harm by bringing an object to one's body** | | | | |
| | Base model[a] | | Adjusted model[b] | |
| | Wald statistic | Odds ratio | Wald statistic | Odds ratio |
| Female[c] | 0.60-1.49 | 1.34-1.59 | 1.13 | 1.51 |
| Age[d,e] | 2.13-2.84 | n/a | 4.16 | n/a |
| Family | 6.47* | 2.59 | n/a | n/a |
| Parents | 18.92* | 5.31 | 15.26* | 4.63 |
| Siblings | 0.19 | 1.22 | 0.47 | 0.72 |
| Peers or friends | 1.75 | 0.48 | 1.75 | 0.47 |
| School | 6.34* | 0.30 | 5.97* | 0.30 |
| **Self-harm without an object** | | | | |
| | Base model[a] | | Adjusted model[b] | |
| | Wald statistic | Odds ratio | Wald statistic | Odds ratio |
| Female[c] | 0.10-0.52 | 1.03-1.07 | 0.07 | 1.09 |
| Age[d,e] | 10.53*-11.14* | n/a | 10.37* | n/a |
| Family | 0.84 | 1.34 | n/a | n/a |
| Parents | 0.00 | 0.98 | 0.07 | 0.89 |
| Siblings | 0.48 | 1.29 | 0.20 | 1.19 |
| Peers or friends | 0.35 | 0.79 | 0.37 | 0.78 |
| School | 0.74 | 0.75 | 0.76 | 0.74 |
| **Self-harm by bringing one's body to an object** | | | | |
| | Base model[a] | | Adjusted model[b] | |
| | Wald statistic | Odds ratio | Wald statistic | Odds ratio |
| Female[c] | 13.67*-16.45* | 0.29-0.33 | 14.44* | 0.31 |
| Age[d,e] | 6.04-7.90 | n/a | 6.44 | n/a |
| Family | 7.38* | 2.10 | n/a | n/a |
| Parents | 11.99* | 2.98 | 9.38* | 2.68 |
| Siblings | 0.42 | 1.23 | 0.03 | 0.95 |
| Peers or friends | 3.87* | 0.44 | 3.47 | 0.45 |
| School | 1.60 | 0.68 | 1.45 | 0.69 |

[a]Base model that includes gender, age (dummy coded), and one other predictor (family, parents, siblings, peers/friends, or school). [b]Gender, age (dummy coded), parents, siblings, peers/friends, and school. [c]Range of Wald statistics and odds ratios for the base models are reported. [d]Range of Wald statistics odds ratios are reported for the base models. [e]Age represents a dummy coded variable with 5 levels: < 9, 10, 11, 12, and >13 years old.

*$p < 0.05$.

and other interpersonal stressors or stressor contexts, early adolescents who reported self-harm consistently reported parents as a stressor with greater likelihood, especially regarding self-harm involving objects. This finding among early adolescents is similar to those from previous research among older adolescents. Previous research has shown that older adolescents who self-harm tend to report family problems as an antecedent or correlate of their self-harm behavior and tend to believe that self-harm offers relief or an escape from these problems (e.g., Abrams & Gordon, 2003; Murray, Warm & Fox, 2005).

The percentages reporting various stressors when practicing harmed are similar to those reported in another study of children the same age at these centers (Brown, Birch, Teufel, & Kancherla, in press). In both studies school related problems was the most reported stressor; 42% in the previous study reported that they were stressed or worried daily about school or grade compared to 37% in this study who volunteered grades as a frequent stressor. In the earlier study, 23% reported daily stress about problems at home compared to 31% in the current study volunteering stress related to parents or siblings. In the earlier study peer and friend related stress were measured separately; 26% reported daily stress about be liked or fitting in and 18% daily stress about their friends and their problems. This is compared to 20% in this study who volunteered peer or friend related stressors.

Self-harm, in this study, was positioned as a method of coping with stress. This study did not, however, examine the ways of coping or the outcomes of self-harm as a coping method. For example, Lazarus (1993) described eight ways of coping: confrontive, distancing, self-controlling, social support seeking, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal. One could attempt to discover how self-harming early adolescents categorize self-harm as a way of coping. Some early adolescents may consistently categorize self-harm in one or more categories of coping, whereas others may be more inconsistent, fluid, and flexible with their perceptions of the functions that self-harm performs. Although Lazarus' categories of coping could assist one in defining the function that self-harm, Lazarus cautions that coping is complex process that changes across time and across stressors (Lazarus, 1993). Beyond the ways of coping, one could further examine the outcomes of early adolescent self-harm. Although scarring and death are potential outcomes of self-harm, the immediate and long-term physical, cognitive, and emotional positive and negative consequences of early adolescent self-harm need further examination.

## Recommendations

Additional assessment and research on self-harm is necessary to better understand the mediating and moderating variables that could influence the relationship between perceived stressors and early adolescent self-harm. For example, reporting parents as a stressor increased the likelihood of reporting self-harm that involved bringing an object to one's body, whereas reporting school as a stressor decreased the likelihood of reporting self-harm that involved bringing an object to one's body; possibly demonstrating that all social stressors are not as detrimental. Investigating the different patterns of associations across the different types of self-harm (e.g., self-harm by bringing an object to one's body versus self-harm without an object) may help increase understanding of self-harm among early adolescence. For example, what is it about parental or school stress that predicts certain types of early adolescent self-harm?

Beyond additional basic research on self-harm, developing monitoring systems and implementing screenings for self-harm in early adolescents, particularly in school samples, could further understanding of the incidence and prevalence of self-harm. Early detection systems, screenings, and screening instruments enable secondary prevention and intervention that could improve the mental health of children and adolescents (Committee on School Health, 2004). Health educators and other healthcare professionals could assist in developing and implementing these detection systems regarding self-harm.

As one example, health educators and other health care professionals in school settings could collaborate to screen adolescents for self-harm. In many cases, school-based health centers are obligated to conduct health risk screenings for adolescents who utilize these services. Health care providers within these contexts use instruments, such as the Perkins Adolescent Risk Screen, to screen for health risks similar to those outlined by the American Medical Association's *Guidelines for Adolescent Preventive Services* (Adams, Perkins, & Burns, 2003; Elster & Kuznets, 1994). Health educators could assist in this screening process as well as advocating for the inclusion of self-harm questions in this screening process.

In developing prevention or intervention programs one should focus not only on intrapersonal factors but also interpersonal factors, such as parent-child relationships. Health educators would ideally develop a collaborative program that includes various stakeholders, including parents. For example, in the school context, teachers, administrators, counselors, other school staff, parents, and other key stakeholders in the community could be trained to implement prevention programs and develop school protocols that aim to increase resiliency and thereby reduce self-harm (Onacki, 2005).

## References

Abrams, L. S. & Gordon, A. L. (2003). Self-harm narratives of urban and suburban young women. *Affilia: Journal of Women and Social Work, 18*, 429-444.

Adams, C., Perkins, K. & Burns, J. (2003). Validation of the Perkins Adolescent Risk Screen (PARS). *Journal of Adolescent Health, 33*, 462-470.

Brown, S. L., Birch, D. A., Teufel, J., and Kancherla, V. (in press). Gender and age differences in adolescent worry and related information seeking. *Journal of School Health.*

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.

Committee on School Health (2004). School-based mental health services. *Pediatrics,113*, 1839-1845.

Elster, A. B. & Kuznets, N. J. (1994). *AMA Guidelines for adolescent preventive services (GAPS): Recommendations and rationale*. Baltimore, MD: Williams & Wilkins.

Favazza, A. R. (1998). The coming of age of self-mutilation. *Journal of Nervous and Mental Disorders, 186*, 259-268.

Hurry, J. (2000). Deliberate self-harm in children and adolescents. *International Review of Psychiatry, 12*, 31-36.

Kumar, G., Pepe, D., & Steer, R. A. (2004). Adolescent psychiatric inpatients' self-report reasons for cutting themselves. *Journal Nervous and Mental Disorders, 192*, 830-836.

Laye-Gindhu, A. & Schonert-Reichl, K. A. (2005). Nonsuicidal self-harm among community adolescents: Understanding the "whats" and "whys" of adolescent self-harm. *Journal of Youth and Adolescence, 34*, 447-457.

Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. P*sychosomatic Medicine, 55*, 234-247.

Lazarus, R. S. & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality, 1*, 141-169.

Long, J. S. (1997). *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: Sage Publications.

Murray, C. D., Warm, A., & Fox, J. (2005). An internet survey of adolescent self-injuries. *Australian e-Journal Advancement Mental Health, 4*, 1-9.

National Center for Education Statistics. (2005). *Common Core of Data 2003-2004*. Retrieved November 2, 2005, from http://nces.ed.gov/schoolsearch/

Onacki, M. (2005). Kids who cut: A protocol for public schools. *Journal of School Health, 75*, 400-401.

Ross, S. & Heath, N. (2002). A study of the frequency of self-mutilation in a community sample of adolescents. *Journal of Youth and Adolescence, 31*, 67-77.

Skegg, K. (2005). Self-harm. *Lancet, 366*, 1471-1483.

Suyemoto, K. L. (1998). The functions of self-mutilation. *Clinical Psychology Review*, *18*, 531-554.

Vyrostek, S. B., Annest, J. L., Ryan, G. W., & the Office of Statistics and Programming National Center for Injury Prevention and Control. (2004). Surveillance for fatal and nonfatal injuries—United States, 2001. *Morbidity Mortality Weekly Report, 53*, 1-57.

Webb, L. (2002). Deliberate self-harm in adolescence: A systematic review of psychological and psychosocial factors. *Journal of Advanced Nursing, 38*, 235-244.